

One day I included a piece of *roasted Mutton* with a *Gage*, and found, that in *four* days it had yielded no *Air*; but after my absence of six weeks I saw the *Mercury* was risen to the middle of the *Gage*; and having taken out the meat, I found it of a very ill smell.

Two days after; I included a piece of *raw Beef* and a *Gage* with it, and I saw, that in two days the *Quicksilver* was risen an inch in the *Gage*; and after six weeks absence, I found, the *Mercury* was got almost to the top of the *Gage*, and that this meat had contracted a much worse smell than that which had been *roasted*.

I also kept for *fifteen* days a piece of *fresh Butter* in *vacuo*, and I found, that it smelt more strong than when I first put it in: But yet it could be still eaten upon *bread*; whereas another piece of *Butter*, which at the same time I had kept in the *Air*, was altogether unfit to be eaten.

These are almost all the Experiments I have made touching the Conservation of Bodies in *vacuo*. The Gentlemen of our *Royal Academy*, who saw most of them *July* last, thought them worthy to be entred in their Register, esteeming, that besides the consequences they might afford for *Natural Philosophy*, some other utilities might also be drawn thence. For, since that some Bodies do better keep there than others, some may possibly be found, that will keep there altogether well, and others that will there keep well enough to be transported into places where they could not be had else.

A Letter of Mr. Flamsteed, Professor Regius of Astronomia in London, to Sir Jonas Moor Knight, &c. containing his Observations of the late Lunar Eclipse, on Decemb. 21. 1675.

Illustri Viro

Domino Jona Moor, Equiti Aurato, Rei Tormentariae per Angliam & Hiberniam Supervisori Generali, Job. Flamsteedi, Bene agere & recte va're.

Nisi Cælum à Meridie, hunc Defectum præcedente, nubibus densissimis, pluvia continuâ, & vento validissimo inhorrescens, omnem fere spem optatæ serenitatis abstulisset, itérque hoc per flumen ad navigantibus periculosum admodum readidisset, plus tibi propter Mini-
strum

stria tuae peritioris promissam societatem, hac Observatio debuisset; quem cum Tempestas Londini detinuerit, servum adhibere coactus fui, quo vix rudior esse potest, paucioribusque quam secus vellem animadversionibus meipsum habere contentum. Circa sextam pomeridianam separatae adeo nubes, ut per praterlabentium hiatus Lunam aliquando languide, per vapores crassiusculos, emicantem cernere liceret; exinde spem concepi aliquam, ejus ad 20^{am} Horum appulsum circa octavam observandi; sed vapores facti densiores, & recurrentes frequentiores nubes, eam reddidere frustraneam: Nolui tamen omnem spem abjecere defectum observandi, sed cum servo ad undecimam evigilavi; tunc autem cum Luna per aliquod tempus sub nubibus accumulatis fuisset abscondita, pluresque continuo ex Africo nubes exorirentur, quibus undique subiectum Cælum, ut nulla spes futurae serenitatis esset residua, frustra, si diutius morarer, me fore putavi: Servo propterea ad me evigilandum relitto, domum me contuli; postquam ipsi injunxeram, ut, si qua melioris spes serenitatis effulgeret, me veniret accersum: Sed vix duas horas decubueram, cum me expergefactum venit, clare nunc splendere Lunam, elata & mihi optata voce nuncians. Experrectus, per cubiculi fenestram Lunæ limbum penumbbris offuscatum vidi; ad instrumenta propterea properans, Ipsius jam diametrum ad digitum ferè unius quantitatem deficientem inveni; exinde sequentes novempedali tubo habui observationes; Lunâ tardè plerunque per vapores emicante, qui adeo penumbram aggravare visi sunt, ut difficillimum esset eam ab umbra vera discriminare, nubibus etiam interdum recurrentibus, & impedientibus.

Hora correcta

borologii.

Decembris 21. p. m.

h		
14. 29. 30	"	Inter Cuspides 2085=17'. 16'.
14. 55. 45		Hænum fere tetigit.
15. 00. 30		Hænum certe tetigerit.
15. 11. 30		Cuspis dexter à Mareside 1235=10'. 14".
15. 35. 00		Partes lucidae circiter 2800=23. 11. vel paulo forsitan amplius; difficile enim erat admodum, umbræ veræ terminos per aerem, vaporibus fædatum, de- finire.
15. 42. 30		Umbra prope Macram.
15. 52. 45		Inter cuspides circiter 2288=18'. 57".
16. 07. 15		FINIS: Limbus enim apparuit, & nihil videbatur in rotunditate Lunæ desiderari.
		Limbus

16. 08. 00 Limbus admodum dilucidè per tubum conspectus.
 16. 15. 30 Penumbra, quæ nudis oculis Eclipsin referebat.
 16. 19. 30 Δ capta diameter $3757 = 31'. 05''$. sed vix satis certa; ventus enim fortior tubum hinc inde agitans, haud ad-
 eò stabilem eum tenere permisit ut iterari potuerit &
 accuratior fieri Mensura; quam tamen haud mu-tum
 à veritate abesse putem.
 16. 23. 00 Etiamnum, & postea, limbus ab Eclipsi derelictus obser-
 rior videbatur ac alter: Deinde capi
 Corsicæ à limbo Δ remoto distantiam $2737 = 22'. 37''$.
 limbus ejus proximus à proximo lunæ $: 045 = 8. 39.$
 Sine limbus remotior à Lunæ proximo $599 = 7. 58$ bona.
 Lacus nigri majoris Medium à limbo proximo $452 = 3. 45.$

Notavi præterea.

Quod umbra semper longe distinctior apparuit ad cornua quam ali-
 cubi in facie Lunæ: In prima observatione, vel paulo antè, Cornua
 fuere horizonti parallela.

Tunc etiam Porphyrites, & Lacus Niger Major, a qualiter ex um-
 bra extitère, longitudinem scilicet circiter Mareotidis.

Nunquam tamen Porphyriten superavit in hac Eclipsi; altè il-
 lum in penumbram mersum vidi, sed tempus, aju: ore perito destitutus,
 notare non potui.

In summa Eclipsi ad Corsicam ferè umbra pertigerit; nunquam
 tamen eam extinctam vidi, sed altè adeò in penumbra immersam, ut
 a grè eam potuerim discernere: Sed impediebat forsan aer; clari-
 remque & ab umbra credo viderint remotiorem, quibusunque in aere
 defatatore defecitum hunc considerare contigerit.

Nec unquam umbra vera Insulam Macram pervagabatur, sed
 Penumbra duntaxat densa, per quam difficile erat ipsam percipi-
 pere.

Imminente exitu in eam intentus, servum elatâ voce minuta ab
 horologio indicata pronunciare jussi, quo facilius in proxima camera
 momenta observationum cognoscerem. Sic hora $16^h. 05^m$ etiam si aer
 per opportunè factus fuerit serenior, limbum tamen videre non potui;
 nec cum numeraret $16^h. 6^m$; sed hora $16. 7.$ videre me putavam
 limbi lucem seu languidissimam, & a grè admodum; hora $16. 7. 15''$.
 certior

certior factus sum ex umbris emersisse, nec aliquid in ejus rotunditate desiderari: Ergo tunc Finem observatum statuo. Horā 16^h. 8'. dilucide admodum limbus apparuit.

Exibat umbra juxta Lacum hyperboreum superiore manente Penumbrā, que Eclipsin nudis oculis exhibebat usque 16^h. 15¹ ; sed limbus ab Eclipsi derelictus limbi oppositi claritudinem recuperavit non nisi hora 16^h. 28'. vel serius.

Tempora phasium correcta, ab Altitudinibus Arcturi & Lucidae Corona, Quadrante Tēlescopico, pedum trium & amplius Radio, capitis; quibus, clare aliquando in altero Cæli cardine emicantibus, captandis incubui, quies Lunam subiere nubes.

Initium Eclipsis accidit antequam ad Instrumenta veni: Quod tamen Londini in vico Wintoniensi observavit Edmundus Halleius, cum Lunæ limbus superior a vertice distaret gradus 39°. 51' ; unde horam supputavit 14^h. 16' .
alto eodem 41. 1 Cornu horizonti parallela. 14. 25.

54. 12 ————— 15. 58 ; cum unum vel alterum minutum deficeret, in diametro Lunæ ipsam Nubes subiere, sub quibus delituit, donec ex umbra penitus evaserat; sic ipsi non conspectus fuit finis; ut neque Johanni Coelso, qui in vico Wappingensi, ad Anachoresin, (Angl. the Eremitage,) limbum Lunæ deficientem aliquantulum vidit hor. 14^h. 17³ ; nubibus tamen impeditus finem videre non potuit; è quibus tamen cum eluctata eßet hor. 16^h. 9'. 25'. ex umbra vera ipsam extiisse comperit, densa dunata Penumbrā remanente.

Quomodo calculus mens cum his observationibus consentiat, in alia Epistola ostendam: Quomodo Exterorum observationes, puriori forsan aere factæ, tum iis congruant, scire plurimum cupio, & quotidie audiare expecto. Tu interea, Vir dignissime, res, ut capisti, Astronomicas promovere, mibique favere. perge.

Creenovici, Decemb. 24.

1675.